Overview of the Proposed 4-6 Mathematics Initiative
January 9, 2006

Student's mathematics performance at the end of elementary school is an important predictor of their ultimate educational success. An analysis of the results from Utah's Criterion Reference Tests and the Utah Basic Skills Competency Test (UBSCT) support this statement. A significant percentage of students are not performing at high levels of proficiency in mathematics at the fourth, fifth, and sixth grade levels; which translates into later lack of success on the mathematics portion of the UBSCT.

When students first encounter algebra, much of the difficulty they experience is symptomatic of the cognitive challenges inherent in moving from one mode of thinking to another, from arithmetic reasoning to algebraic reasoning. Focusing on ways to use the fourth, fifth, and sixth grade mathematics curriculum to support the development of algebraic reasoning seeks to overcome the difficulties many students now experience and will lay a better foundation for secondary school mathematics.

The increasing mathematical sophistication of the curriculum in grades four, five, and six, makes the development of teachers' expertise important. Teachers need to understand both the mathematical content and students' mathematical thinking. An effective professional development program will help teachers understand the mathematics they teach, how their students learn mathematics, and how to facilitate learning.

Building the mathematical knowledge and capacity of teachers requires ongoing, sustained professional development. Funds are necessary for districts to implement an ongoing professional development program for fourth, fifth, and sixth grade teachers, provide formative assessments to monitor student progress, and to offer interventions for fourth, fifth, and sixth grade students not reaching mathematical proficiency.

Therefore, the following is recommended:

1. Funding formulas for the mathematics initiative will be based upon:
    a. Number of fourth, fifth, and sixth grade teachers in each district, and
    b. Each school's enrollment of fourth, fifth, and sixth grade students.
2. Districts work with content experts in mathematics to formulate a plan for ongoing professional development to build mathematics content knowledge for all fourth, fifth, and sixth grade teachers of mathematics.
3. Districts provide an annual report of their professional development program, data specific to student performance on the CRTs, and the nature and frequency of classroom assessments used in mathematics instruction.
4. Individual schools, in consultation with their district, formulate a plan for effective intervention programs supported by best practices or educational research. The plan shall address students' academic needs and provide for the following:
    a. A description of how data from CRTs will be used to formulate a plan for students served in specific intervention programs.
    b. A plan for the dissemination of program information to parents, teachers, and students prior to administration of the program.
    c. Details of the specific interventions that will be used.
    d. A description of a system for monitoring and counseling that is linked to the progress of students on classroom assessments and CRTs.

Total Ongoing Funding Requested: $16 million